

ABSTRACT

Modified neurotoxin comprising neurotoxin including structural modification, wherein the structural modification alters the biological persistence, preferably the biological half-life, of the modified neurotoxin relative to an identical neurotoxin without the structural modification. The structural modification includes addition or deletion of a leucine-based motif or parts thereof. In one embodiment, methods of making the modified neurotoxin include using recombinant techniques. In another embodiment, methods of using the modified neurotoxin to treat biological disorders include treating autonomic disorders, neuromuscular disorders or pains.